

**Notice of Allowability**

Application No.

09/712,638

Examiner

Cheyne D. Ly

Applicant(s)

RIGOUTSOS ET AL.

Art Unit

2168

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 2/28/2007.
2. ☒ The allowed claim(s) is/are Claims 1-6, 8-12, 23, and 25 (renumbered as 1-13).
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),  
Paper No./Mail Date March 09, 2007.
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

  
Examiner

### **EXAMINER'S AMENDMENT**

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

2. Authorization for this examiner's amendment was given in a telephone interview with Micki Cooper on March 09, 2007.

The application has been amended as follows:

#### **IN THE SPECIFICATION**

3. The title has been amended to read: --A METHOD AND APPARATUS FOR DISCOVERING PATTERNS IN A SET OF SEQUENCES--

#### **IN THE CLAIMS**

4. Claim 1, line 11, delete "and"

5. Claim 1, line 13, delete "patterns", insert therefor --patterns; and--

6. Claim 1, after line 13, enter new line --storing the plurality of patterns in a data storage device.--

7. Claim 23, line 14, delete "and"

8. Claim 23, line 16, delete "patterns", insert therefor --patterns; and--

9. Claim 23, after line 16, enter new line --store the plurality of patterns in a data storage device.--

10. Claim 25, 13, delete "and"

11. Claim 25, line 15, delete "patterns", insert therefor --patterns; and--

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12. Claim 25, after line 15, enter new line –store the plurality of patterns in a data storage device.—

13. The following is an examiner's statement of reasons for allowance:

1. The prior art of record fails to teach or suggest the claimed invention individually or in combination the limitation of "wherein the specified plurality of symbols consists of at least two symbols and no more than  $|\Sigma|-1$  symbols, wherein  $|\Sigma|$  is a number of available symbols in a set of amino acids, and wherein  $\Sigma$  consists of A, C, D, E, F, G, H, I, K, L, M, N, P, Q, R, S, T, V, W, and Y" as set forth in claim 1, and similarly in claims 23 and 25.

2. Dependent claims 2-6 and 8-12 being further limiting to the independent claim 1, definite, and enabled by the specification are also allowed.

3. The closest prior art, Rigoutsos et al. taken with IUPAC-IUB Joint Commission of Biochemical Nomenclature (JCBN), Rigoutsos describes a new algorithm for the discovery of rigid patterns (motifs) in biological sequences (page 55, Abstract etc.) wherein the sequences are defined by the alphabet of residues represented by one-letter codes (e.g. the set of all amino acids). It is well known in the art that the set of all amino acids comprises B for aspartic acid or asparagine (at least two symbols), X for unknown or other amino acid, or Z for glutamic acid or glutamine (JCBN, pages 5-6). Therefore, one of ordinary skill in the art at the time of the invention would have been motivated by Rigoutsos to include in the alphabet of residues B for aspartic acid or asparagine (at least two symbols), X for unknown or other amino acid, or Z for glutamic acid or glutamine as described by JCBN. However, Rigoutsos et al. and JCBN in

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combination do not teach or suggest the limitations cited above as being free of any prior art when read in the claims as a whole.

4. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### **CONCLUSION**

5. Claims 1-6, 8-12, 23, and 25 (renumbered as 1-13) are allowed.

6. Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

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7. For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199. The USPTO's official fax number is 571-272-8300.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to C. Dune Ly, whose telephone number is (571) 272-0716. The examiner can normally be reached on Monday-Friday from 8 A.M. to 4 P.M.

9. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Vo, can be reached on (571) 272-3642.

C. Dune Ly  
Patent Examiner  
3/18/07

